Remarks

The present Response is to the Office Action mailed on December 07, 2007. Claims 1-15 are presented for examination.

Rejections under 35 U.S.C. 112

Claims 1, 2, 5, 6,7, 10, 11, 12, and 15 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Examiner's rejection

The above listed claims disclose the acronym "BGD" without defining how this term is used in regards for this invention. Appropriate action is required.

Applicant's response

Applicant herein amends the claims to define the acronym "BGP" and include said protocol in the operation of the router. Applicant believes the Examiner erred when stating "BGD". Applicant assumes for the sake of the present response that the Examiner means "BGP". Additionally, BGP is a known protocol in the Internet realm and is adequately defined in applicant's specification and positively recited in applicant's claims. Therefore, applicant argues that claims 1, 2, 5, 6, 7, 10, 11, 12, and 15 are definite and particularly point out and distinctly claim applicant's invention.

Examiner's rejection

Claims 5, 10, and 15 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The above listed claims disclose an edge router having a first and second scheduler and first and second ready list. This contrasts what's presented in the

Description of Preferred Embodiments section of the specification and Figure 3, which disclose the edge router has one scheduler and one ready list. Appropriate action is required.

Applicant's response

Applicant herein amends the specification regarding Fig. 3 to recite a first and second scheduler and first and second ready list are provided for VPRNs and core events, respectively. Applicant believes the specification, as amended, supports claims 5, 10 and 15 and the 112 rejection should be withdrawn.

Merit rejection under 35 U.S.C. 103(a)

Claims 1-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rekhter et al. (US 6,339,595), hereinafter Rekhter, in view of Jayaraman et al. (US 2003/0210694) hereinafter Jayaraman, and further in view of Langille et al. (US 7,242,665) hereinafter Langille.

Examiner's rejection

9. Rekhter discloses a service provider's edge router (broadly interpreted to include edge router) in an Ethernet network (broadly interpreted to include packet network) comprising:

- router circuitry for performing functions provided as communications hardware (broadly interpreted to include a processor resource for processing events);
- one or more processors software-configured to perform communications' operations (broadly interpreted to include at least one scheduler managing all events for processing by the processing resource);
- a Tag Information Base (TIB, broadly interpreted to include ready list);
- individual tunnels (broadly interpreted to include event pipelines) dedicated to individual ones of BGP peers;

- wherein packets (broadly interpreted to include events) received for processing are sent (broadly interpreted to include posted) in their associated tunnels according to the source of the packets;
- tunnels having packets to be processed modify the TIB (broadly interpreted to include insert a flag in the ready list);
- releases packets to the router circuitry based on predetermined limitations per tunnel;
- the preset limitation is a time limitation; and
- the preset limitation is a filter (broadly interpreted to include buffer)

(Abstract; Figure 1; Column 3, Line 66 - Column 4, Line 9; Column 8 , Lines 40-54; Column 10, Line 41 - Column 12, Line 19; Column 14, Lines 17-29; Column 41, Lines 43-60; Column 44, Lines 53-57; Column 45, Lines 7-13).

Rekhter fails to disclose the scheduler repetitively scans the ready list sequentially; wherein individual ones of the BGP peers are virtual private routed networks (VPRNs) away from the packet network; and comprising a first and a second scheduler, a first and a second ready list, and pipelines dedicated to events associated with both VPRNs and core BGP peers in the service provider network, wherein the pipelines associated with VPRNs communicate with the first scheduler and the first ready list, and the pipelines associated with the core BGP peers communicate with the second scheduler and the second ready list.

10. Jayaraman discloses in the same field of endeavor a router in an Ethernet network (broadly interpreted to include packet network) comprising:

- a resource manager (broadly interpreted to include scheduler) continuously scanning the data in the table (broadly interpreted to include ready list) sequentially (Paragraphs 0118 and 0212). Jayaraman discloses the above difference for the purpose of developing an intelligent content-based router that examines the data in a packet, and then routes the packet to a destination where it call be most quickly, cheaply, and efficiently processed.

11. Therefore, it would have been obvious to one of ordinary skill in the art at the time the applicant's invention was made to take the edge router described by Rekhter and add to it the functionality of the router described by Jayaraman to create an edge router for a packet network comprising intelligent content-based components that examine the data in a packet, and then routes the packet to a destination where it can be most quickly, cheaply, and efficiently processed.

Applicant's response

Applicant points out that when the Examiner fails to identify statements of teachings of the presented art with columns and line numbers, respectively, and/or in reasonably relative proximity to said teachings there is no way for applicant to determine exactly what part of Rekhter the Examiner relies upon to read on any specific limitation. The Examiner lists a plurality of teachings of Rekhter in a bulleted form and then broadly interprets it to read on applicant's claim language identifying all of the portions of Rekhter in one lump sentence at the end of the list. Applicant respectfully request the Examiner list the actual teaching of Rekhter next to each bulleted limitation it presumably teaches. In the present response Applicant will take a best guess as to what recognized portion of Rekhter reads on each claim limitation.

Applicant argues that the TIB of Rekhter cannot read on applicant's ready list, as claimed. Applicant produces said teaching below:

"2. The TIB

When a router R uses tag switching, it fetches next-hop information in response to a tag, so it uses a routing table separate from the FIB, from which it fetches next-hop information in response to a destination address. This separate table is sometimes called the Tag Information Base (TIB). The TIB next-hop entries contain a next-hop IP address and a tag-stack operation. For our purposes, we need consider only three tag-stack operations:

remove the tag stack's last-added ("top") value ("pop the stack");

replace the top tag-stack value with a specified value; and

discard the packet.

When router R receives a tagged packet, it uses the packet's top tag as an index into the TIB and fetches the indicated entry." (col. 10, lines 39-55)

Applicant argues that the Examiner may not remove all of the functionality and meaning from claim limitations in order to apply the art, when examining claims. Applicant's ready list is used in the invention to initiate the sending of packets through their respective pipelines. The ready list includes flags inserted by pipelines, the flags indicating that there is data to be sent in the respective pipeline. The TIB of Rekhter includes next-hop entries contain a next-hop IP address and a tag-stack operation. The TIB of Rekhter holds addresses that are used when tags are addressed in data packet headers while processing and sending packets in the processor of Rekhter. The flags in applicant's ready list are to initiate the sending of packets per pipeline. Therefore, the TIB of Rekhter could not possibly replace or have a similar function as the ready list claimed in applicant's invention.

Applicant also disagrees that Rekhter teaches wherein packets (broadly interpreted to include events) received for processing are sent (broadly interpreted to include posted) in their associated tunnels according to the source of the packets. Sending packets through a tunnel as taught in Rekhter cannot possibly read on 'posting' packets to a pipeline, as claimed. Applicant's actual claim language reads; "events received for processing are posted in their associated event pipelines according to the source of the events". The packets are not actually sent until the scheduler picks up the flag in the ready list by sequential readings.

Applicant also disagrees that Jayaraman teaches "a resource manager (broadly interpreted to include scheduler) continuously scanning the data in the table (broadly interpreted to include ready list) sequentially (Paragraphs 0118 and 0212)" as espoused by the Examiner. Applicant reproduces said paragraphs of Jayaraman, below:

> **[0118]** The Resource Inspector has two sub-components, the Resource Locator and the Resource Manager. The Resource Locator collects different resource information from different servers by sending resource agents to different servers. The collected resource information is given to the Resource Manager. The Resource Manager organizes and manages the information and forms the Resource Table (RT). The Resource Table contains the resource name and the server address. The extracted data (by the Packet Inspector) is scanned in the Resource Table to locate the server address or addresses and forms the Data Location Table (DL table). The DL table is sent to the Scheduler for further processing. Algorithms for locating the resources and forming the RT and DL tables are shown hereinafter (see Algorithms 2 and 3). For implementing this component Java is used.
>
> **[0212]** While some of the operations mentioned above are executed sequentially others are executed in parallel. When the system is started the ResourceTable, SystemStatusTable, and ProximityTable operations are executed in parallel. These three operations are executed continuously until the system is stopped. The rest of the operations are executed sequentially and are done based on the UserRequest.

The resource manager as disclosed in Jayaraman, above creates separate tables reflecting available resources (servers and addresses) and then forms a data location table. A Packet inspector scans the resource table to locate server addresses and data at the servers. Paragraph [0212] teaches that operations regarding tables are executed in parallel. The rest of the operations (whatever they are) are executed sequentially.

These teachings in Jayaraman has absolutely nothing to do with applicant's claimed scheduler which repetitively scans the ready list sequentially, and releases events to the processor resource with preset limitation per pipeline. The Examiner, again, has taken individual words from applicant's claimed limitations completely removing their context within the claim, and in some cases, their meaning in the English language and attempts to apply art that may include some similar terms. This practice does not provide a valid prime facie case of obviousness against applicant's claims.

Applicant believes claim 1, as amended, is patentable over the art of Rekhter and Jayaraman as argued above. Claims 2-5 are patentable on their own merits, or at least as depended from a patentable claim.

Examiner's rejection

12. In addition, Langille discloses in the same field of endeavor a router in an Ethernet network (broadly interpreted to include packet network) comprising:

- individual interfaces of the BGP peers are virtual private routed networks (VPRN) away from the Ethernet;
- first and second router comprising a first and second QoS manager (broadly interpreted to include scheduler), a first and second routing table respectively, and

tunnels (broadly interpreted to include pipeline) dedicated to protocol messages or packets (broadly interpreted to include events) associated with both VPRN and core BGP peers in the service provider network, wherein the tunnels associated with the VPRNs communicate with the first QoS manager and the first routing table, and the tunnels associated with the core BGP peers communicate with the second QoS manager and the second routing table (Figure 2; Column 1, Lines 20-33; Column 1, Lines 45-58; Column 4, Lines 7-24; Column 4, Lines 57-67). Langille discloses these differences for the purpose of providing improved performance in the face of tremendous growth in network size and complexity.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the applicant's invention was made to take the above combined edge router by Rekhter and Jayaraman and add to it the functionality of the router described by Langille to create an edge router for a packet network comprising intelligent content-based components that examine the data in a packet, and then routes the packet to a destination where it can be most quickly, cheaply, and efficiently processed in the face of tremendous growth in network size and complexity.

Applicant's Response

Applicant's claim 5 specifically recites; "The edge router of claim 2 comprising a first and a second scheduler, a first and a second ready list, and pipelines dedicated to

events associated with both VPRNs and core BGP peers in the service provider network, wherein the pipelines associated with VPRNs communicate with the first scheduler and the first ready list, and the pipelines associated with the core BGP peers communicate with the second scheduler and the second ready list.

The portions of Langille fail to teach a *single router* having a second scheduler, or QoS manager, as claimed. The Examiner states Langille teaches first and second routers. Applicant accomplishes the claimed routing within a single server. Therefore, the art of Langille fails to teach dual schedulers and tables serving separate VPRNs within the same router, as claimed.

The Examiner rejects independent claims 6 and 11 using the same art and rationale applicant successfully argued above, on behalf of claim 1. Therefore, claims 6 and 11 are also patentable over the art of Rekhter, Jayaraman and Langille. Claims 7-10 and 12-15 are patentable based upon their own limitations or at least as depended upon a patentable claim.

Summary

As all of the claims have been shown to be patentable over the available art and the Examiner's specific rejections, applicant herein requests reconsideration and the case be quickly passed to issue. If any fees are due beyond fees paid with this amendment, authorization is made to deduct those fees from deposit account 50-0534. If any time extension is needed beyond any extension requested with this amendment, such extension is hereby requested.

Respectfully submitted,
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